

REMARKS

This Amendment is submitted in response to the Examiner's Office Action dated May 15, 2009. Reconsideration of the application, as presently amended, is respectfully requested. Claims 1-33 were originally filed with this application. Claims 1, 4-6, 22-29 and 33 were previously canceled without prejudice. Claims 34 – 53 were previously added. Accordingly, Claims 2, 3, 7-21, 30-32, and 34-53 are currently pending.

Favorable reconsideration of this application is respectfully requested for the reasons set forth in these remarks.

I. CLAIM REJECTION UNDER 35 USC § 112

Claims 2, 3, 7-21, 30-32, and 34-53 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2, 7, 12, 17, 30, 34, 34, 35, 36, 41, 46, and 51, and by dependency Claims 3, 8-11, 13-16, 18-21, 31, 32, 37-40, 42-45, 47-50, 52 and 53, have been amended for clarity. Applicant respectfully asserts that these claims comply with 35 U.S.C. § 112, second paragraph and respectfully urges that this rejection be withdrawn.

II. CLAIM REJECTION UNDER 35 USC § 103(a)

All pending claims have been rejected based on U.S. Patent No. 6,017,475 issued to Cantrell (“*Cantrell*”) in view of U.S. Patent No. 3,547,577 issued to Lovercheck, et al. (“*Lovercheck*”),

either together or in view of other patents. The Applicant respectfully urges that the present claims, as herein amended, are patentable over *Cantrell* in view of *Lovercheck*, for at least the following reasons:

1. *Cantrell* does not teach a feedstock consisting essentially of thermoplastic material, cellulosic fibers or combinations thereof because *Cantrell's* feedstock is combined with rubbish.

Each claim in the application includes the limitation that the “feedstock consists essentially of thermoplastic material, cellulosic fibers or combinations thereof” which is not taught by *Cantrell*. *Cantrell* defines “garbage” as “decomposable wastes from food” and defines “rubbish” as “decomposable wastes, either combustible (such as paper, wood, and cloth) or non-combustible (such as metal, glass, and ceramics).” See Col. 1, lines 13-16. *Cantrell* teaches the use of a feedstock consisting of both “garbage” and “rubbish.” See Col. 1, lines 25-30 (“The present invention is primarily directed to the reduction, conversion, decomposition, and destructive distillation of garbage and rubbish (hereinafter *collectively defined as 'household garbage.'*)”); see also Abstract (“The method of transforming *household garbage* into useful material comprises the steps of: *providing a quantity of household garbage* having a first volume and a liquid content; reducing the garbage having a first volume to an aggregate shard having a second volume smaller than [sic] the first volume; optionally expelling liquid from the aggregate shard; and heating the aggregate shard under pressure greater than ambient pressure to create an aggregate shard pulp.”); Col. 11, lines 64-65 (“[h]ousehold garbage...is introduced into a hammer mill...”). Because *Cantrell* is combining decomposable waste from food with rubbish, he is not teaching a feedstock consisting essentially of thermoplastic material, cellulosic fibers or combinations thereof.

MPEP § 2143.03 requires that, to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested in the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). In order to establish obviousness, the prior art references must describe and enable the claimed invention *in sufficient clarity and detail* to establish that the claimed matter already existed in the prior art. *Elan Pharms. Inc. v. Mayo Found. For Med. Educ. Research*, 364 F.3d 1051, 1055 (Fed. Cir. 2003). *Cantrell* simply does not provide “sufficient clarity and detail” required by the Federal Circuit to render obvious a feedstock consisting essentially of thermoplastic material, cellulosic fibers or combinations thereof. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn.

2. *Cantrell* does not teach a feedstock consisting essentially of thermoplastic material, cellulosic fibers or combinations thereof because *Cantrell’s* feedstock contains a substantial amount of water.

In the Examiner’s Response, the Examiner takes the position that “*Cantrell’s* volumetric reduction of 30-75% does not specify that the debulking is solely due to water removed. The debulking would be due to rearranging the material to take up less space via converting to shard form (see col. 12, lines 5-11). Thus, no minimum of water is required in *Cantrell’s* garbage.” Office Action, page 10. The position that no water is required in the process taught by *Cantrell* is not consistent with plain reading of *Cantrell*. Consider the following excerpts from *Cantrell*:

1. “The art to which the invention relates ... can be described as a wet-pulping process of grinding solid waste magnetically freed from iron particles, supplied with sewage sludge or water, fractionated into portions of different size and treated in a fermentation process

- for about 24 hours. Various solvents and reactant solutions or materials are then used to transform the compost.” Col. 3, line 61 – col. 4, line 4. Cantrell specifically states that “the art to which this invention relates” is a wet-pulping process. It cannot be clearer that water is inherent in the feedstock.
2. “The expeller unit 14 is provided to remove water and liquid substances from the shard.” Col. 12, lines 20-21. If no water is required in Cantrell’s garbage, Cantrell would not teach the inclusion of an expeller for removing water and liquid substances.
 3. “In yet another embodiment of the process of the present invention, the liquids and solutions (i.e. water and water-based solutions) extracted from the expeller are then separated to remove the trace amounts of oils, if any, from the water-based solutions.” Since Cantrell affirmatively states that liquids and solutions are extracted from the expeller (i.e., he only uses the words “if any” to qualify the amount of oil present), liquids must be required in the feedstock.
 4. “As the tunnel is restricted, the shard is squeezed within the confines of the tunnel to force moisture from the shard prior to its exit from the expeller unit.” Col. 12, lines 17-20. Again, if no water is required in Cantrell’s garbage, Cantrell would not teach the inclusion of an expeller for removing water and liquid substances.
 5. “The liquids and solutions (i.e., water and water-based solutions) extracted from the expeller are then separated to remove the trace amounts of oils, if any, from the water-based solutions.” Col. 10, lines 48-51.
 6. Fig. 1 shows “Liquid Solution” being removed from the expeller and Fig. 2 shows an “H₂O Solution” being fed into the centrifuge. If water is not present in the Cantrell’s

process, there would be no need to remove a “liquid solution” from the expeller and the feed into the centrifuge would not be characterized as an “H2O Solution.”

7. “The system of the present invention can be summarized in a variety of ways, one of which is the following: a system for transforming household garbage having a first volume into useful material, comprising: a grinder for reducing the volume of the household garbage to a shard; *an expeller for extracting liquids from the shard...*” If the process taught by Cantrell did not include liquid, there would be no need for the expeller.

Even if *Cantrell’s* feedstock consisted of a disproportionately large amount of thermoplastic material of cellulosic fibers, *Cantrell’s* teachings referenced above make it clear that his feedstock would still include a substantial amount of liquid and cannot, therefore, be said to consist essentially of thermoplastic material, cellulosic fibers or combinations thereof as claimed by the Applicant.

In order to establish obviousness, the prior art references must describe and enable the claimed invention *in sufficient clarity and detail* to establish that the claimed matter already existed in the prior art. *Elan Pharms. Inc. v. Mayo Found. For Med. Educ. Research*, 364 F.3d 1051, 1055 (Fed. Cir. 2003). Cantrell teaches a process related to a wet-pulping process” and does not teach a process wherein the feedstock consists essentially of thermoplastic material, cellulosic fibers or combinations thereof as claimed by the Applicant.

3. Grinder operating *torque* is not a result-effective variable and the Examiner has not shown why it would be optimized within the claimed range.

With respect to Claims 2, 7, 12 and 17, 34, 36, 41 and 46 (and Claims 8-11, 13-16, 18-21, 37-40, 42-45 and 47-50 by dependency), the Examiner asserts that, because *Cantrell* teaches that the

grinder operates at a rated velocity depending upon the configuration of the machine used and that it rotates so that the work piece is ground to the desired shape, size, and finish, *Cantrell* “obviously” recognizes that the grinder operating torque is a result-effective variable because “given that the velocity and material are ground properly, the torque would be a function of these variables.” The Examiner’s position that torque is a result-effective variable under these circumstances is in error for at least the following reasons:

a. Torque is not a result-effective variable.

The Examiner acknowledges that *Cantrell* does not disclose a grinder operating torque of between about 18,000 and about 20,000 ft-lbs of torque per motor shaft. The Examiner then concludes that, because *Cantrell* teaches that the grinder operates at a rated velocity depending upon the configuration of the machine used and that it rotates so that the work piece is ground to the desired shape, size, and finish, “one of ordinary skill in the art would have obviously determined the optimum grinder operating torque through routine experimentation.”

While under certain circumstances grinder operating torque may be a result-effective variable, *Cantrell* does not suggest or teach that torque is an important factor or, for that matter, even a factor to consider and, consequently, torque is not a result-effective variable. See *Ex parte Tilton*, 2008WL533791, (Bd. Pat. App. & Interf. 2008) (“While it may ordinarily be the case that determination of optimum values for the parameters of a prior art process would be at least be prima facie obvious, that conclusion depends upon what the prior art discloses with respect to those parameters.”).

The torque required for processing garbage containing a substantial amount of liquid would have been of little concern for *Cantrell*. Because the garbage going into *Cantrell*’s grinder is made

up of 25 – 70% liquid, it would have a very low viscosity which could be processed with very low torque. One of ordinary skill in the art would not have recognized that the constant velocity grinder used by *Cantrell* to process a low viscosity feedstock would have required adjustments to the torque. There would be no need to optimize the torque and there would certainly be no need to optimize the torque in the range of between about 18,000 and about 20,000 ft-lbs of torque per motor shaft.

A cursory review of *Cantrell* reveals that there is no mention of, or reference to, torque. *Cantrell* does not disclose or suggest that torque is a result-effective variable or in any way relevant for achieving the desired velocity. Although the discovery of an optimum value of a result-effective variable in a known process is ordinarily within the skill of the art, one of the long-standing exceptions to this rule is when the parameter optimized was not recognized in the prior art as one that would affect the results. *See, e.g., Ex parte Malathy*, 2003 WL 21279935 (Bd. Pat. App. & Interf. 2003) (“We do not see any evidence in the record to support the Examiner’s position that the pH is a known result-effective variable in this situation. There is simply no teaching or suggestion in the evidence of record to adjust the pH of a colorant blend or to achieve a particular pH range as here claimed.”)(emphasis added); *Ex Parte Alsop*, 2001WL863722 (Bd. Pat. App. & Interf. 2001) (finding that, because the cited reference does not disclose or suggest that number average molecular weight is a result-effective variable or in any way relevant for achieving effective peritoneal dialysis, it was not a result-effective variable)(emphasis added); *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977); *Ex parte Datta, et al.*, 2008WL4759864, (Bd. Pat. App. & Interf. 2008).

When there is no evidence in the record to support the Examiner’s position that the parameter is a result-effective variable, the variable cannot be deemed to be result-effective. *See*,

e.g., Ex Parte Hofer, et al., 2008 WL 5232773 (Bd. Pat. App. & Interf. 2008). *Cantrell* did not recognize torque as a result-effective variable because *Cantrell* was concerned with grinding garbage with a high liquid content. The low viscosity garbage feedstock could be processed at a constant velocity with little if any change in the torque. By contrast, when processing a feedstock consisting essentially of thermoplastic material, cellulosic fibers or combinations thereof, the torque may vary considerably depending on the proportion of thermoplastic material and cellulosic fibers be processed in the grinder at any particular time. If the feedstock is particularly dense, the torque will increase as the grinder works to process the material. In short, there is simply no suggestion or teaching in *Cantrell* by which one of ordinary skill in could have predicted that torque was a result-effective variable through the processing of garbage with a high liquid content.

The Examiner states in the Office Action “Applicant does not contest that [Cantrell’s] grinder’s torque and operating speed would fall within the claimed range.” Office Action, page 12. However, the foregoing discussion which was also included in the prior response, makes it clear that processing of low viscosity household garbage with a high water content would require substantially different torque than a mixture of thermoplastic material and cellulosic fibers.

Because there is no evidence in the record to support the Examiner’s position that the parameter is a result-effective variable, the Applicant respectfully urges that Claims 2, 7, 12 and 17, 34, 36, 41 and 46 and their dependents are in condition for allowance.

b. Examiner didn’t provide reason for optimizing torque within the stated range.

To establish obviousness, it is generally necessary to provide a reason to have modified the prior art to arrive at the claimed invention. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741

(2007). The Examiner has not established an evidentiary basis for optimizing the torque as required in Applicant's claims. Even if torque would have been recognized as a result-effective variable, which, once again, is a conclusion with which the Applicant disagrees, the Examiner has not provided a reason to have required it to be between about 18,000 and about 20,000 ft-lbs of torque per motor shaft and, as a result, the Examiner has failed to show that the Applicant's invention would be obvious in view of *Cantrell*.

The Examiner states that *Cantrell* teaches that the grinder operates at a rated velocity depending upon the configuration of the machine used and that it rotates so that the work piece is ground to the desired shape, size, and finish. The Examiner then concludes that *Cantrell* "obviously" recognizes that the grinder operating torque is a result-effective variable because "given that the velocity and material are ground properly, the torque would be a function of these variables." However, the Examiner has not stated, nor would it be evident to one of skill in the art, *why* grinder operating torque would be optimized at between about 18,000 and about 20,000 ft-lbs of torque per motor shaft.

When it is not obvious why a result-effective variable would be optimized within a certain range, the invention cannot be deemed to be obvious. *See, e.g., Ex Parte Hofer, et al.*, 2008 WL 5232773 (Bd. Pat. App. & Interf. 2008) (finding that the Examiner has failed to show obviousness where the Examiner had not established an evidentiary basis for optimizing the diacrylic acid content to the value and theoretical plate position in a column as required by claim 1. "Even were diacrylic acid to have been recognized as a result-effective variable whose optimal value would have been routinely discovered by persons of ordinary skill in the art, the Examiner has not provided a reason to have required it to be above or equal to 550 ppm. ... Thus, it is not evident why

the skilled worker would have sought to optimize the concentration of diacrylic acid in the rectification column above a certain threshold.”).

In the present case, *Cantrell* does not suggest or teach any reason why the torque would be optimized at between about 18,000 and about 20,000 ft-lbs of torque per motor shaft as claimed by the Applicant. Accordingly, the Examiner has failed to establish that the Applicant’s invention is obvious in view of *Cantrell*. The Examiner simply concludes that *Cantrell* “obviously” recognizes that the grinder operating torque is a result-effective variable because “given that the velocity and material are ground properly, the torque would be a function of these variables.” Such an unfounded conclusion cannot, and does not support an obviousness rejection. See, e.g., *Ex Parte Datta, et al.*, 2008 WL 4371720, (Bd. Pat. App. & Interf. 2008) (“Finally, the Examiner's conclusion that it would have been obvious to use first and second polymeric materials having the claimed flexural modulus as a matter of routine optimization of result-effective variables cannot be sustained without some articulated underlying basis. It is readily apparent that as a material's stiffness increases its flexibility generally decreases. However, the Examiner has not factually established general conditions of stiffness and/or flexibility in the pant-like, prefastened, disposable absorbent article art or analogous art based on the teachings of Kline and/or Battrell and/or the knowledge of one of ordinary skill in the art. Instead, the Examiner merely concludes it would have been obvious to use first and second polymeric materials having the claimed flexural modulus because a flexible material is less stiff, less rigid or less hard.”).

The Applicant respectfully urges that Claims 2, 7, 12 and 17, 34, 36, 41 and 46 and their dependents are in condition for allowance because the Examiner has not established an evidentiary

basis for optimizing the torque to between about 18,000 and about 20,000 ft-lbs of torque per motor shaft.

4. Grinder operating *speed* is not a result-effective variable and the Examiner has not shown why it would be optimized within the claimed range.

With respect to Claims 3, 8, 13, 18, 35, 37, 42 and 47, the Examiner also asserts that, because *Cantrell* teaches that the grinder operates at a rated velocity depending upon the configuration of the machine used and that it rotates so that the work piece is ground to the desired shape, size, and finish, *Cantrell* “obviously” recognizes that the grinder operating speed is a result-effective variable because “it rotates so that the work piece is ground to the desired shape, size and finish.” The Examiner’s position that grinder operating speed is a result-effective variable under these circumstances is in error for at least the following reasons:

a. Grinder operating speed is not a result-effective variable.

The Examiner acknowledges that *Cantrell* does not disclose a grinder operating speed of between about 75 and about 80 rpm. The Examiner then concludes that, because *Cantrell* teaches that the grinder operates at a rated velocity depending upon the configuration of the machine used and that it rotates so that the work piece is ground to the desired shape, size, and finish, “one of ordinary skill in the art would have obviously determined the optimum grinder operating speed applied in the process of *Cantrell* through routine experimentation.”

While it under certain circumstances, grinder operating speed may be a result-effective variable, *Cantrell* does not suggest or teach that speed is an important factor to consider and, consequently, speed is not a result-effective variable. See *Ex parte Tilton*, 2008WL533791 (Bd.

Pat. App. & Interf. 2008) (“While it may ordinarily be the case that determination of optimum values for the parameters of a prior art process would be at least be prima facie obvious, that conclusion depends upon what the prior art discloses with respect to those parameters.”).

Just as previously discussed with torque, the speed required for a grinder to process garbage containing a substantial amount of liquid would have been of little concern for *Cantrell*. Because the garbage going into *Cantrell*’s grinder is made up of 25 – 70% liquid, it would have a very low viscosity which could be processed at any speed desired. There would be no need to optimize the speed since virtually any speed would work, and there would certainly be no need to optimize the speed in the range of between about 75 and about 80 rpm.

A review of *Cantrell* reveals that the only mention of grinder speed appears during a general discussion of commercially available grinders. In that paragraph, *Cantrell* states “Hammer mills incorporate a rotating drum, or spindle, with free-floating hammers. The hammer mill is designed to spin at a relatively high speed.” Col. 9; lines 16-26. *Cantrell* does not disclose or suggest that grinder speed is a result-effective variable or in any way relevant for achieving the desired velocity. Although the discovery of an optimum value of a result-effective variable in a known process is ordinarily within the skill of the art, one of the long-standing exceptions to this rule is when the parameter optimized was not recognized in the prior art as one that would affect the results. *See, e.g., Ex parte Malathy*, 2003 WL 21279935 (Bd. Pat. App. & Interf. 2003); *Ex Parte Alsop*, 2001WL863722, (Bd. Pat. App. & Interf. 2001); *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977); *Ex parte Datta, et al.*, 2008WL4759864, (Bd. Pat. App. & Interf. 2008).

When there is no evidence in the record to support the Examiner’s position that the parameter is a result-effective variable, the variable cannot be deemed to be result-effective. *See,*

e.g., Ex Parte Hofer, et al., 2008 WL 5232773 (Bd. Pat. App. & Interf. 2008). *Cantrell* did not recognize speed as a result-effective variable because *Cantrell* was concerned with grinding garbage with a high liquid content. The low viscosity garbage feedstock could be processed at any speed desired. In short, there is simply no suggestion or teaching in *Cantrell* by which one of ordinary skill in could have predicted that speed was a result-effective variable through the processing of garbage with a high liquid content.

The Examiner states in the Office Action “Applicant does not contest that [Cantrell’s] grinder’s torque and operating speed would fall within the claimed range.” Office Action, page 12. However, the foregoing discussion which was also included in the prior response, makes it clear that processing of low viscosity household garbage with a high water content would operate at substantially different speeds than a mixture of thermoplastic material and cellulosic fibers.

Because there is no evidence in the record to support the Examiner’s position that the parameter is a result-effective variable, the Applicant respectfully urges that the Claims as presented are in condition for allowance.

b. Examiner didn't provide reason for optimizing speed within the stated range.

To establish obviousness, it is generally necessary to provide a reason to have modified the prior art to arrive at the claimed invention. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. at 1741. The Examiner has not established an evidentiary basis for optimizing the grinder operating speed as required in Applicant's claims. Even if speed would have been recognized as a result-effective variable, which, once again, is a conclusion with which the Applicant disagrees, the Examiner has not provided a reason to have required it to be between about 75 and about 80 rpm and, as a result, the Examiner has failed to show that the Applicant's invention would be obvious in view of *Cantrell*.

The Examiner states that *Cantrell* teaches that the grinder operates at a rated velocity depending upon the configuration of the machine used and that it rotates so that the work piece is ground to the desired shape, size, and finish. The Examiner then concludes that *Cantrell* "obviously" recognizes that the grinder operating speed is a result-effective variable because the grinder "rotates so that the work piece is ground to the desired shape, size and finish." However, the Examiner has not stated, nor would it be evident to one of skill in the art, *why* grinder operating speed would be optimized at between about 75 and about 80 rpm.

When it is not obvious why a result-effective variable would be optimized within a certain range, the invention cannot be deemed to be obvious. *See, e.g., Ex Parte Hofer, et al.*, 2008 WL 5232773 (Bd. Pat. App. & Interf. 2008). In the present case, *Cantrell* does not suggest or teach any reason why the speed would be optimized at between about 75 and about 80 rpm as claimed by the Applicant. Accordingly, the Examiner has failed to establish that the Applicant's invention is obvious in view of *Cantrell*. The Examiner simply concludes that *Cantrell* "obviously" recognizes

that the grinder operating speed is a result-effective variable. Such an unfounded conclusion cannot, and does not support an obviousness rejection. See, e.g., *Ex Parte Datta, et al.*, 2008 WL 4371720 (Bd. Pat. App. & Interf. 2008).

The Applicant respectfully urges that all claims are in condition for allowance because the Examiner has not established an evidentiary basis for optimizing the speed to between about 75 and about 80 rpm.

CONCLUSION

In view of the foregoing remarks, the Applicant respectfully submits that all pending claims are allowable over the art of record and respectfully requests a timely Notice of Allowance. If the Examiner does not believe the pending claims are in condition for allowance, Applicant respectfully requests that the Examiner contact Applicant's attorney to arrange an interview before the Examiner issues another Office Action.

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